

Claims

We claim:

1. An electronic structure, comprising:

a substrate;

a first circuit line including a first conductive pad and having a first thickness, wherein the first circuit line is coupled to the substrate; and

a second circuit line including a second conductive pad and having a second thickness that is unequal to the first thickness, wherein the second circuit line is coupled to the substrate, and wherein the second circuit line is electrically coupled to the first circuit line.

2. The electronic structure of claim 1, wherein the first circuit line is in mechanical contact with the second circuit line.

3. The electronic structure of claim 1, wherein said electrical coupling between the first circuit line and the second circuit line includes a third circuit line coupled to the substrate, wherein the third circuit line has a third thickness that is unequal to both the first thickness and the second thickness, wherein a portion of the third circuit line is electrically coupled to a portion of the first circuit line, and wherein a portion of the third circuit line is electrically coupled to a portion of the second circuit line.

4. The electronic structure of claim 1, wherein an end of the first circuit line includes the first conductive pad, and wherein an end of the second circuit line includes the second conductive pad.

5. The electronic structure of claim 1, further comprising a protective coating that covers a portion of a circuit line, wherein the circuit line includes the first circuit line and the second circuit line.

6. The electronic structure of claim 1, wherein the first circuit line is mechanically coupled to a first surface of the substrate, and wherein the second circuit line is mechanically coupled to a second surface of the substrate.

7. The electronic structure of claim 6, wherein said electrical coupling of the second circuit line to the first circuit line includes a plated through hole (PTH), wherein a portion of the first circuit line is coupled to a first end of the PTH, and wherein a portion of the second circuit line is coupled to a second end of the PTH.

8. The electronic structure of claim 1, wherein the first circuit line is mechanically coupled to a surface of the substrate, and wherein the second circuit line is mechanically coupled to the surface.

1 9. The electronic structure of claim 1, further comprising:
2 a first solder ball coupled to the first conductive pad;
3 an electronic assembly coupled to the first solder ball;
4 a second solder ball coupled to the second conductive pad;
5 and
6 an electronic carrier coupled to the second solder ball.

1 10. The electronic structure of claim 9, wherein a diameter of
2 the second solder ball is unequal to a diameter of the first
3 solder ball.

4 11. The electronic structure of claim 1, wherein the first
5 conductive pad includes a metallic layer, and further comprising:
6 a first metallic coating over the metallic layer; and
7 a second metallic coating over the first metallic coating,
8 wherein the first metallic coating inhibits diffusion of a metal
9 from the second metallic coating into the metallic layer.

1 12. The electronic structure of claim 11, further comprising:

2 a wirebond interconnect coupled to the first conductive pad
3 at the second metallic coating;

4 an electronic assembly coupled to the wirebond interconnect;

5 a solder ball coupled to the second conductive pad; and

an electronic carrier coupled to the solder ball.

1 13. The electronic structure of claim 12, wherein the metallic

2 layer includes copper, wherein the first metallic coating

3 includes nickel, wherein the metal of the second metallic coating

4 is selected from the group consisting of gold and palladium, and

5 wherein the wirebond interconnect includes a gold wire.

1 14. An method for forming an electronic structure, comprising:
2 providing a substrate;
3 forming a first circuit line that includes a first
4 conductive pad and has a first thickness;
5 coupling the first circuit line to the substrate;
6 forming a second circuit line that includes a second
7 conductive pad and has a second thickness that is unequal to the
8 first thickness;
9 coupling the second circuit line to the substrate; and
10 electrically coupling the second circuit line to the first
11 circuit line.

12 15. The method of claim 14, further comprising mechanically
13 coupling the second circuit line to the first circuit line.
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1 16. The method of claim 14, wherein the electrically coupling
2 step includes:

3 forming a third circuit line, coupled to the substrate,
4 having a third thickness that is unequal to both the first
5 thickness and the second thickness;

6 electrically coupling a portion of the third circuit line
7 with a portion of the first circuit line; and

8 electrically coupling a portion of the third circuit line
9 with a portion of the second circuit line.

10 17. The method of claim 14, wherein the step of forming a first
11 circuit line comprises forming the first conductive pad at an end
12 of the first circuit line, and wherein the step of forming a
13 second circuit line comprises forming the second conductive pad
14 at an end of the second circuit line.

15 18. The method of claim 14, further comprising:

16 selecting a circuit line that includes the first circuit
17 line and the second circuit line;

18 forming a protective coating over a portion of the circuit
19 line.

1 19. The method of claim 1, wherein the step of coupling the first
2 circuit line to the substrate includes mechanically coupling the
3 first circuit line to a first surface of the substrate, and
4 wherein step of coupling the second circuit line to the substrate
5 includes mechanically coupling the second circuit line to a
6 second surface of the substrate.

1 20. The method of claim 19, wherein the electrically coupling
2 step comprises:

3 forming a plated through hole (PTH) through a thickness of
4 the substrate;

5 coupling a portion of the first circuit line to a first end
6 of the PTH; and

7 coupling a portion of the second circuit line to a second
8 end of the PTH.

9 21. The method of claim 14, wherein the step of coupling the
10 first circuit line to the substrate includes mechanically
11 coupling the first circuit line to a surface of the substrate,
12 and wherein the step of coupling the second circuit line to the
13 substrate includes mechanically coupling the second circuit line
14 to the surface.

1 22. The method of claim 14, further comprising:

2 coupling a first solder ball to the first conductive pad;

3 coupling an electronic assembly to the first solder ball;

4 coupling a second solder ball to the second conductive pad;

5 and

6 coupling an electronic carrier to the second solder ball.

1 23. The method of claim 22, wherein the step of coupling a second

2 solder ball to the second conductive pad includes coupling the

3 second solder ball, having a diameter that is unequal to a

4 diameter of the first solder ball, to the second conductive pad.

5 24. The method of claim 14, wherein the first conductive pad
6 includes a metallic layer, further comprising:

7 forming a first metallic coating over the metallic layer;

and

forming a second metallic coating over the first metallic
coating, said first metallic coating inhibiting diffusion of a
metal from the second metallic coating into the metallic layer.

1 25 The method of claim 24, further comprising:

2 forming a wirebond interconnect to the first conductive pad
3 at the second metallic coating;

4 coupling an electronic assembly to the wirebond
5 interconnect;

6 forming a solder ball coupled to the second conductive pad;
7 and

8 coupling an electronic carrier to the solder ball.

26. The method of claim 24, wherein the metallic layer includes
copper, wherein the first metallic coating includes nickel,
wherein the metal of the second metallic coating includes gold or
palladium, and wherein the wirebond interconnect includes gold.

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